

Application Number 10/525296

Response to the Office Action mailed March 2, 2009 and Advisory Action mailed June 17, 2009

**REMARKS**

Favorable reconsideration of this application is requested in view of the following remarks.

Applicants appreciate the Examiner's courtesy of sending the interview summary mailed June 2, 2009 of the telephone interview held on May 27, 2009. The discussion of the interview has been reflected in the remarks in the response submitted on June 2, 2009 and also in the following remarks.

Claims 1 and 16 have been amended as supported by table 2 of the specification on page 25. Accordingly, claim 6 has been canceled, and claims 7 and 10 have been amended editorially. Claim 17 has been amended editorially.

Claims 1-10 and 12-17 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Kitaura et al. (U.S. Patent Application Publication No. 2002/0122366) in view of Nishiuchi et al. (Japanese Journal of Applied Physics, 37 (1998) 2163).

Applicants respectfully traverse this rejection.

Kitaura discloses a recording medium that includes a recording layer made of material containing Te, O, and M (see page 1, para. [0013]). Kitaura merely discloses upper and lower limits of oxygen concentrations in the recording layer such as 60 at % and 25 at %, respectively, and those of M concentrations such as 35 at % and 1 at %, respectively (see page 3, paras. [0039] and [0040]) and might suggest that the oxygen contents would contribute to improving a C/N ratio and sensitivity (*id.*). Kitaura, however, merely discloses only one Te-O-M composition such as Te<sub>42</sub>-O<sub>53</sub>-Pd<sub>5</sub> (at %) (see page 5, para. [0067] and page 7, para. [0085]) and does not disclose the particular Pd concentration of 8 at % as the M concentration nor that the recording layer provided nearer to the laser beam incidence side has a lower concentration of oxygen atoms as claim 1 recites. By providing a recording layer having a lower oxygen concentration nearer to the laser beam incidence side (see a medium sample (2) in table 2 at page 25 of the specification), the difference in transmittance between the recorded state and

Application Number 10/525296

Response to the Office Action mailed March 2, 2009 and Advisory Action mailed June 17, 2009

unrecorded state such as  $(Ta + Tc)/2$  and the coefficient of variation  $(V_H - V_L)/V_H$  of the envelope of the information layer provided nearer to the laser beam incidence side is reduced, the transmittance of such information layer is higher, and consequently, the error rate of such information layer is lower (see tables 1- 3 on pages 24, 25, and 30, respectively, page 6, lines 10-19, page 28, line 18 – page 29, line 12, and page 30, line 5 – page 31, line 5 of the specification). Even if the oxygen and palladium concentrations are within the upper and lower limits disclosed by Kitaura such that the oxygen at % of 54.0 and 54.0 and 51.0 and the palladium at % of 10.0 and 10.0 and 11.0 of the recording media samples (0) and (1) respectively, both recording medium samples (0) and (1) show inferior characteristics to those of the media sample (2) of claim 1 (see tables 2 and 3 on pages 25 and 30, respectively, of the specification). In particular, when the recording layers in the recording medium have the same Te-O-M composition such as the recording medium sample (0) that has only one Te-O-M composition such as  $Te_{36}O_{54}Pd_{10}$  among recording layers in the medium, the recording medium provides inferior characteristics to those of the medium in which a recording layer provided nearer to the laser beam incidence side has a lower concentration of oxygen atoms, like the recording medium sample (2), as claim 1 recites (*id.*). As discussed above, Kitaura discloses only one Te-O-M composition such as  $Te_{42}O_{53}Pd_5$  (at %), and thus, the Kitamura sample would provide similar characteristics to those of the recording medium sample (0) of the present application, which provides inferior characteristics to those of the medium sample (2) of claim 1 (see *id.* and page 5, para. [0067] and page 7, para. [0085] of Kitaura).

Accordingly, claim 1 and claims 3-5, 7, 10, and 12-15, which ultimately depend from claim 1, are distinguished from Kitaura.

Nishiuchi discloses a  $Te_{42}O_{46}Pd_{12}$  suboxide phase-change film and the conventional film of  $Te_{50}O_{35}Pd_{15}$  (see second para. under “3.1 Optimization of Te-O-Pd films” on page 2164). Like Kitaura, Nishiuchi, however, does not disclose the particular Pd concentration of 8 at % nor that the recording layer provided nearer to the laser beam incidence side has a lower concentration of oxygen atoms as claim 1 recites. Thus, Nishiuchi does not remedy the deficiencies of Kitaura.

Application Number 10/525296

Response to the Office Action mailed March 2, 2009 and Advisory Action mailed June 17, 2009

Claim 16, which is a method claim including similar elements to those in claim 1, and claim 17, which depends from claim 16, are distinguished from Kitaura in view of Nishiuchi for at least the same reasons as discussed for claim 1 above.

Accordingly, this rejection should be withdrawn.

Claim 11 has been rejected under 35 U.S.C. 103(a) as being unpatentable over Kitaura et al. (U.S. Patent Application Publication No. 2002/0122366) in view of Nishiuchi et al. (Japanese Journal of Applied Physics. 37 (1998) 2163) as applied above, and further in view of Imaino et al. (U.S. Patent No. 5,555,537). Applicants respectfully traverse this rejection.

Imaino discloses an optical disk drive including multiple phase-change WORM recording layers (see abstract). Imaino, however, does not disclose the recording layer including Tc-O-Pd, in which Pd is 8 at %, nor that the recording layer provided nearer to the laser beam incidence side has a lower concentration of oxygen atoms as claim 11, which depends from claim 1, recites. Accordingly, Imaino does not remedy the deficiencies of Kitaura and Nishiuchi, and this rejection should be withdrawn.

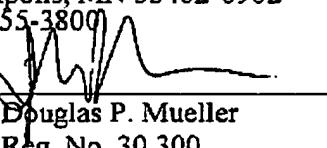
In view of the above, Applicants request reconsideration of the application in the form of a Notice of Allowance.

Respectfully submitted,



HAMRE, SCHUMANN, MUELLER &  
LARSON, P.C.  
P.O. Box 2902  
Minneapolis, MN 55402-0902  
(612) 455-3800

By:

  
Douglas P. Mueller  
Reg. No. 30,300

Dated: August 3, 2009

DPM/my/jls